The background of the cover is a photograph of a street scene. On the left, there is a multi-story building with a light-colored facade and many windows. On the right, there are trees with green leaves. The overall lighting is soft and slightly hazy, suggesting an overcast day or early morning/late afternoon. The text is overlaid on the top left and center of the image.

Lithuanian Academy of Sciences
IFTtoMM National Committee of Lithuania
Society for Experimental Mechanics
Vilnius Gediminas Technical University
Klaipėda University
Lithuanian University of Agriculture
Kaunas University of Technology

VIBROENGINEERING-2010

9th International Conference

PROGRAMME

14-15 October, 2010, Kaunas, Lithuania

**Lithuanian Academy of Sciences
IFToMM National Committee of Lithuania
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VIBROENGINEERING – 2010

9th International Conference

PROGRAMME

14-15 October, 2010

Kaunas, 2010

AIM

To present and discuss the latest developments, theoretical achievements and application results in the field of Vibration Engineering. Special emphasis is made on the areas of current priorities: MEMS, nanotechnology, mechatronics, biomechanical and biomechatronic systems.

CONFERENCE VENUE

VIBROENGINEERING-2010 will be organized in Kaunas University of Technology. Kaunas, which has nearly 400000 inhabitants, is the second largest city of Lithuania and the city of universities with over 35000 students in six state universities. Hundreds of years of cultural heritage are preserved in the historical and architectural monuments, museums, theatres, art galleries and churches. Kaunas is a city of old traditions and together a large centre of business and industry.

TOPICS

- Vibrations and waves in mechanical systems;
- Effects of non linear mechanics in vibration systems;
- Vibroshock systems;
- Active vibration control;
- Adaptive systems and intelligent mechanisms;
- Piezomechanics;
- Vibration and wave technologies;
- Dynamics and vibroacoustics of machines;
- Vibratory monitoring and diagnostics techniques;
- Nano-micro positioning and manipulating systems;
- MEMS, nanotechnology and biomechanical systems.

The accepted papers will be reviewed and published in the Journal of Vibroengineering, having impact factor (IF). The Journal material is referred: Thomson Scientific (ISI Web of Science); SCOPUS; EBSCO Publishing, Inc.; INSPEC and VINITI.

Journal of Vibroengineering (JVE) (Quarterly) is published by the company "Vibromechanika" and is supported by the Lithuania Academy of Sciences, Kaunas University of Technology, Vilnius Gediminas Technical University and Riga Technical University.

More information at: <http://www.jve.lt>

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J. Škliba, Technical University of Liberec, Czech Republic
G. Tomlinson, University of Sheffield, UK
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A. Žvironas, Kaunas University of Technology

TRAVEL INFORMATION

Kaunas airport (11 km from Kaunas)

From Kaunas airport you can reach Kaunas city:

- By bus
- By taxi

Bus to/from Kaunas

City bus No. 29 connects Kaunas Airport and Kaunas city going on the route: Train station - Bus station - Savanoriu ave. - Kaunas Airport (Karmelava).

If you arrive to Kaunas on a late night flight, City bus No. 29E is for your convenience. Every day the bus leaves the Airport for the city centre only after the last flight has arrived.

The bus goes on the route: Kaunas Airport - Savanoriu ave. - Ožeškienės str. - K.Donelaičio str., Vytauto ave., M.K.Čiurlionio str.

You can check the bus route and exact timetables at: www.kvt.lt

TICKET PRICES AND VALIDITY

Single-trip paper ticket prices:

When purchasing at the distribution site (newsstand) - 1.8 Lt.

When purchasing from a driver - 2 Lt.

E-ticket prices:

E-ticket card price (containing e-tickets – you are not allowed to purchase empty card) - 6 Lt.

3-day e-ticket - 16 Lt (valid from the moment of purchase and lasts for the next 2 days).

7-days e-ticket - 29 Lt (valid from the moment of purchase and lasts for the next 6 days).

TIP! If you purchase an electronic ticket, please keep the purchase receipt – the data about purchased e-tickets is sent to passenger control groups every 30 minutes. However, you can safely use the public transport, just during the first hour after the e-ticket purchase, in case of the passenger control, please provide the electronic ticket and also the e-ticket purchase receipt.

To call for a taxi:

TEO: +370 37 333 111
Omnitel: 1422 +370 620 333 333
Bite: 1441 +370 640 333 333
Tele2: +370 670 333 333

From Vilnius International Airport

(<http://www.vilnius-airport.lt/en/>)

to Vilnius Bus Station:

► by bus of city line No.1 going on the route Airport - Station. Travel time – about 15 min., fare 2,50 Lt/0,8 EUR.

<http://www.vilniustransport.lt/>

From Vilnius International Airport to Kaunas

(~100 km to Kaunas)

For your convenience an express bus service runs from Vilnius to Kaunas Airport and from Kaunas Airport to Vilnius.

KAUNO ORO UOSTO EKSPRESAS

In Vilnius the bus picks up and leaves the passengers at Hotel Panorama, the bus stop at Kaunas Airport is just in front of the passenger terminal. Bus schedule is coordinated with Ryanair flight schedule and serves every flight.

From Vilnius you can reach Kaunas

- **by bus** ((ticket price ~ 20 Lt, travel time ~1 h 30 min)
- **by microbus** (ticket price ~ 20 Lt, travel time ~ 1 h 20 min)
- **by train** (ticket price ~ 17 Lt, travel time ~1h 40 min)

More information at: <http://www.stotis.lt/en>

WHERE TO BUY TICKETS

TIP! At the Airport bus tickets can be purchased at the outlet Rkiosk located in the Arrivals of the passenger terminal. Local currency Litas and bank cards are accepted for payment. If you do not have any money in Litas, you can exchange your money at a currency exchange office of Medicinos bankas at the Arrivals. Working hours are coordinated with the flight schedule.

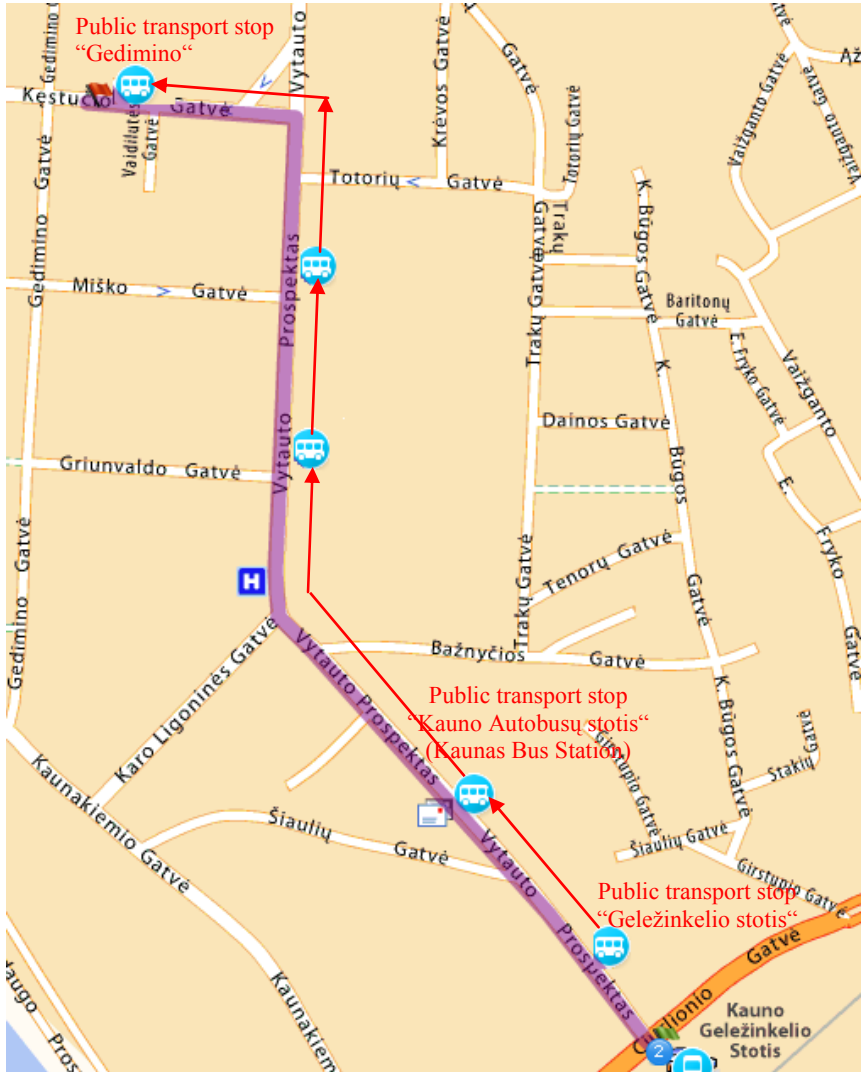
All Kaunas city public transport tickets can be purchased at newsstands that are located all around the city, most often close to bus stops, as well as outlets Rkiosk. E-tickets can also be purchased at these points, and at Maxima and Silas department stores.

HOW TO REACH THE CONFERENCE LOCATION

From Kaunas Train station/Bus station you can reach the conference location (Mickeviciaus str. 37):

- **by bus (12; 23; 24**, fare 2,00 Lt/0,6 EUR)
- **by trolleybus (No: 1; 5; 7; 14; 15**, fare 2,50 Lt/0,8 EUR) -
- **by microbus (No: 27; 30; 35; 40; 51; 56; 105**, fare 2,50 Lt/0,8 EUR)
- **by taxi (10 min)**
- **on foot (~25 min)**

To reach the conference location from the Kaunas train station (2) You should travel from the public transport stop “**Geležinkelio stotis**” (**Train Station**) and get off on stop “**Gedimino**”(indicated by a red flag on a map below):

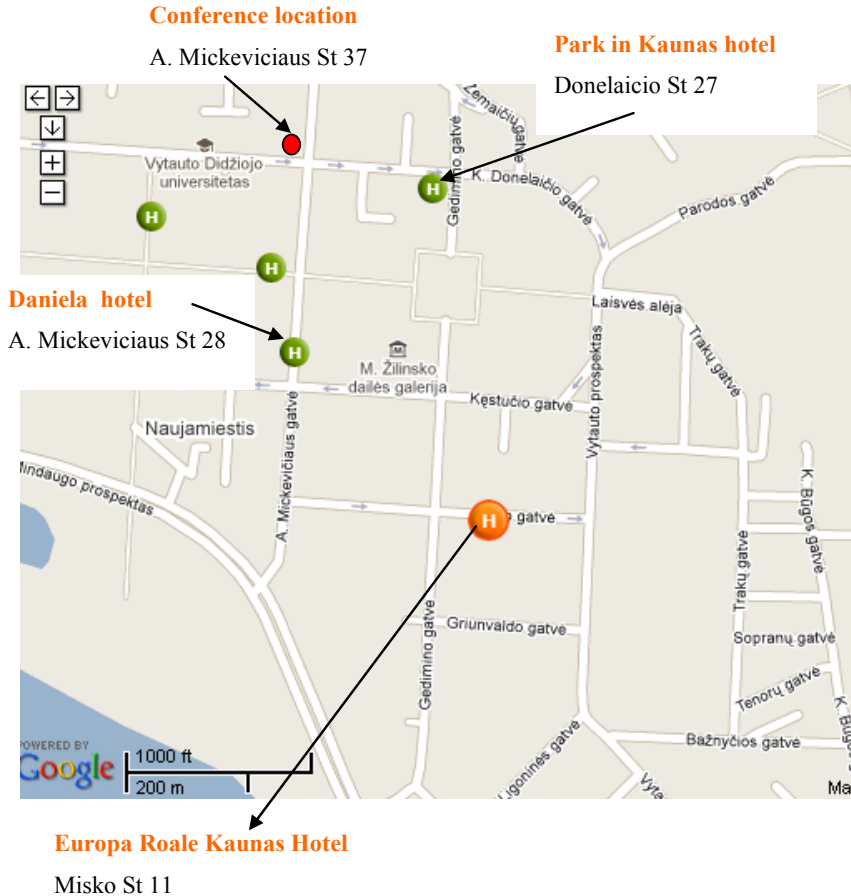


Then you should go on foot to the conference location **Mickevičiaus str. 37** (please see the below placed map, which shows the route from the bus stop “**Gedimino**” (1) to the conference location **Mickevičiaus St 37** (indicated by a red flag on the map below):



Kaunas hotels near the conference location

(please see the map below)



More information about Kaunas hotels you can find at:

<http://www.eurobookings.com>

<http://www.parkinn.com/hotel-kaunas>

<http://www.danielahotel.lt/?lang=en>

October 14, 2010 (Thursday) Meeting Room 1

Venue: Mickevičiaus str. 37, KTU Aula

8:30 – 9:00	Arrival and registration
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Note:

- (1) You can also register at any time during the conference.**
- (2) Certificate of Participation can be collected at the registration desk.**
- (3) Please copy PPT files of your presentation to the session computer.**
- (4) Please register to the One Day Tour at the registration desk.**

INSTRUCTIONS FOR ORAL PRESENTATIONS

Devices Provided by the Conference Organizer:

Laptop (with MS-Office & Adobe Reader)
Projector & screen laser pointer

MATERIALS PROVIDED BY THE PRESENTERS:

PowerPoint or PDF files

Duration of each Presentation (Tentatively):

Regular Oral Session: about **10 Minutes** of Presentation,
5 Minutes for Q&A.

Morning, October 14, 2010 (Thursday)

Venue: Mickevičiaus str. 37, KTU Aula

OPENING SESSION Session Chair: **R. Bansevicius**

Time: 9:00 – 13:00

9:00 – 9:20	Opening remarks, Raimundas ŠIAUČIŪNAS, Rector of the Kaunas University of Technology, Lithuania
9:20 – 9:40	Plenary Speech 1, Prof. Ramutis BANSEVIČIUS, Kaunas University of Technology, Lithuania
9:40 – 10:00	Plenary Speech 2, Prof. Janis VIBA, Rigas Technical University, Latvia
10:00 – 10:15	Minvydas RAGULSKIS, Kaunas University of Technology, Lithuania Coding, forecasting and control based on nonlinear dynamical systems and chaos
10:15 – 10:30	Shigeki TOYAMA, Gohei YAMAMOTO Wearable-agri-robot
10:30 – 10:45	Grigory PANOVKO, Alexander GOUSKOV Self-oscillatory vibrating cutting
10:45 – 11:00	Mikhail ZAKRZHEVSKY, Alex KLOKOV Bifurcation analysis and rare attractors in driven damped pendulum systems
11:00 – 11:15	Mikhail ZAKRZHEVSKY, V. YEVSTIGNEJEV Clusters of submerged subharmonic isles with rare attractors in nonlinear machine dynamics
11:15 – 11:30	Taking Photo & Coffee Break

Morning, October 14, 2010 (Thursday)

Venue: Mickevičiaus str. 37, KTU Aula

SESSION – 01 Session Chair: **K. Pilkauskas**

Time: 11:30 – 13:00

11:30 – 11:45	Janis VIBA, Edgars KOVALS, Stanislavs NOSKOVŠ, Guntis KULIKOVSKIS Experimental investigations using armfield wind tunnel
11:45 – 12:00	Janis VIBA, Guntis KULIKOVSKIS Edgars KOVALS, Maris EIDUKS, Jean-Guy FONTAINE, William MEGILL Investigations of a floating robot
12:00 – 12:15	Janis VIBA, Atis VILKAJS, Edgars KOVALS Cargo pendulum vibration damping inside vehicle hull
12:15 – 12:30	Viachaslau BILYK, Evguenia KOROBKO, Alexandr BINSHTOK Simulation of oscillating system with the electrorheological shock-absorber
12:30 – 12:45	N. CHERNECKAYA, E. VARAKUTA, YU. BELECKIJ Evaluation of the main reliability indicators of the transport system
12:45 – 13:00	Dariusz POŁOK Application of single-board with the embedded Dos operating system as central units of data acquisition system used for vibration measurements
13:00 – 14:00	Lunch break

Afternoon, October 14, 2010 (Thursday)

Meeting Room 1

SESSION – 01 Session Chair: **K. Juzėnas**

Time: 14:00 – 15:30

14:00 – 14:15	Vitezslav FLIEGEL, Rudolf MARTONKA, Jan PETŘÍK Research of the influence of mechanical vibration over human
14:15 – 14:30	Michal SIVČÁK, Jan ŠKODA Radial correction controllers of gyroscopic stabilizer
14:30 – 14:45	Janis AUZINŠ, Vitalijs BERESNEVIČS, Semjons CIFANSKIS, Imants KAKTABULIS Internal vibrating gyrodrive for an underwater vehicle
14:45 – 15:00	Vitaly BERESNEVICH, Janis VIBA, Semyon TSYFANSKY, Bruno GRASMANIS, Vladimir YAKUSHEVICH, Maris EIDUKS, Edgars KOVALS, Maarja KRUUSMAA Fin type propulsive devices with varying working area of vibrating tail
15:00 – 15:30	V.E. LYALIN Automated rheological model selection with optimal complexity in viscometric study of oil Elastic reservoir model identification using basic field development parameters
15:30 – 15:45	Coffee Break

Afternoon, October 14, 2010 (Thursday)

Meeting Room 1

SESSION – 01 Session Chair: **K. Juzėnas**

Time: 15:45 –17:15

15:45 –16:00	Alexander JANUSHEVSKIS, Alexander BOYKO, Anatoly MELNIKOVS Shape optimization of mounting disk of railway vehicle measurement system
16:00 – 16:15	Sinan Serdar OZKAN, Durmus KARAYEL Effects of interference fits on the static and dynamic characteristics of mechanical system
16:15 – 16:30	Bernard WYRWOL Hardware implementation of the Lf graph greedy coloring algorithm in the Fpga-Fis fuzzy inference system
16:30 – 17:00	Bronislovas SPRUOGIS, Arūnas JAKŠTAS, Vytautas TURLA The Investigation of Possibilities of the Table Vibrator with Controlled Damping
17:00 – 17:15	Discussions, closing remarks
17:15 – 18:30	Free time
18:30 – 22:00	Evening Program

Afternoon, October 14, 2010 (Thursday)

Meeting Room 2

POSTER SESSION

Time: 14:00 – 17:00

Ramutis BANSEVIČIUS, Algimantas BUBULIS, Vytautas JŪRĖNAS, Edvardas VAICEKAVIČIUS, Vladimir MINCHENIA, Igor ADZERICHO	Aspects of the application of ultrasonic mechanical vibrations in vascular diseases treatment
Ramutis BANSEVIČIUS, Arūnas ŽVIRONAS, Marius GUDAUSKIS	Piezoelectric manipulator with touch sensitive screen
Rimantas BARAUSKAS, Andrius VILKAUSKAS	A Finite Element Model for Simulation of Ballistic Response of Bullet Impact on Flexible Composites Structures
Genovaitė BAURIENĖ, Kęstutis PILKAUSKAS	Compliant mechanism with microhydraulic actuation
Roman CHUBYK	Current parameter investigation in electromagnetic drive of resonance adaptive vibromachines while using the duo polar latitude-impulsive tension for its power supply
Vladimir V. SOKOL	Amplitude of radial oscillations and imbalance parameters of the rotating rotor
Karolis MALINAUSKAS Vytautas OSTAŠEVIČIUS Rolanas DAUKŠEVIČIUS Viktoras GRIGALIŪNAS	Micro-hardness and surface morphology analysis of MOEMS micro membrane

Afternoon, October 14, 2010 (Thursday)

Meeting Room 2

POSTER SESSION

Time: 14:00 – 17:00

Abdullah UZUN	The definition of the car seat vibration
Vilen ROYZMAN, Viktor TKACHUK, Algimantas BUBULIS, Arvydas PAULIUKAS	Principles of the low-vibroactivity washing machines development
Juozas PADGURSKAS Raimundas RUKUIŽA Algimantas BUBULIS	Analysis the tribological properties of the piezo drives contact pairs
Arvydas PALEVIČIUS, Birutė NARIJAUSKAITĖ Giedrius JANUŠAS	Microstructure formation on the basis of computer generated hologram
Laima PATAŠIENĖ, Kazimieras RAGULSKIS, Algimantas FEDARAVIČIUS	Development and experimental analysis of layered actuators
Petras PAŠKEVIČIUS	Materials with thermal-strain properties in solar energetics
Irena TIKNEVIČIENĖ, Vitalijus VOLKOVAS, Antanas SUDINTAS	Mathematical model of dynamics of tubular node with sylphon element
Gintautas BALČIŪNAS V. AUGUTIS A. MEŠKUOTIENĖ	Liquid flow rate measurement using weighing method
Marius MALCIUS V. AUGUTIS R. RAMANAUSKAS	Analysis of fastening element impact on pipe modal vibrations

Afternoon, October 14, 2010 (Thursday)

Meeting Room 2

POSTER SESSION

Time: 14:00 – 17:00

Jonas VOBOLIS, Darius ALBREKTAS	Study of resonance phenomena in acoustic wood panels
Vytautas GRIGAS, R. MAKSVYTIS, Rymantas Tadas TOLOČKA	Inertial load stabilization in exercise machines
Remigijus JONUŠAS, Kazimieras JUŽĖNAS, Liutauras SAKALAUSKAS	Analysis of complicated dynamical situations of rotary machines
Asta KABELKAITĖ, Valdas MILIŪNAS, Laura GEGECKIENĖ, Edmundas KIBIRKŠTIS, Liutauras RAGULSKIS	Investigation of packages resistance under dynamic loads
Vytautas KARGAUDAS, Nerijus ADAMUKAITIS	Steel frame response due to extreme dynamic load
Pranas KUZAS, V. AUGUTIS, D. GAILIUS, A. DUMČIUS	The sampling problems in granulometry
Vladimirs GONCA, Jurijs SVABS	Projecting elastomeric shock absorbers with variable stiffness
Algimantas BUBULIS Vytautas JŪRĖNAS Sigita NAVICKAITĖ Viktorija RUGAITYTĖ	Investigation of motion control of piezoelectric unimorph for laser shutter systems
V. BILYK, E. KOROBKO, A. BINSHTOK, A. BUBULIS	Simulation of oscillation dynamics of mechanical system with the electrorheological shock-absorber

Afternoon, October 14, 2010 (Thursday)

Meeting Room 2

POSTER SESSION

Time: 14:00 –17:00

Marius VASYLIUS, Jurgita GRIGONIENĖ, Vytautas BARZDAITIS	Diagnostics of high power coupling
R. VASILIAUSKAS R. GREIČIUS Algimantas BUBULIS	Laser methods application for identification documents authentication
Pranas MAŽEIKA, Vytautas BARZDAITIS	Vibration evaluation of deep groove ball bearings
Minvydas RAGULSKIS Edita ŠAKYTE Miguel A.F. SANJUAN	Control of a dendritic neuron under external phase-independent excitation
Darius MAŽEIKA, Justinas KUNEVIČIUS, Vitalijus VOLKOVAS, Egidijus DRAGAŠIUS	Research of the flexible bellow with the magnetorheological fluid
Raimundas VASILIAUSKAS, Arvydas PALEVIČIUS	Strobe holography for analysis of multimode vibrations of mechanical system
Dmitry A. STEPANENKO, Vladimir T. MINCHENYA, Algimantas BUBULIS	Modeling of dynamic stability of flexible ultrasonic waveguides
Artūras KERŠYS, Neringa KERŠIENĖ	Dynamics of loadings acting on coupling device of accelerating auto train
Andrejs KRASNIKOVS, Olga KONONOVA, Juris KALINKA, Galina KHARKOVA, Angelina GALUSHCHAK, Artur MACHANOVSKY	Fiber orientation in viscous fluid flow with and without vibration

Morning, October 15, 2010 (Friday)

Meeting Room 3

SESSION – 01 Session Chair: **L. Patašienė**

Time: 10:00 – 13:00

9:00 – 9:15	Bronius BAKŠYS, Jolanta BASKUTIENĖ Sigitas KILIKEVIČIUS, Andrejus CHADAROVICHIUS Experimental investigation of robotized assembly using vibrations
9:15 – 9:45	Jelena ŠKAMAT, Algirdas Vaclovas VALIULIS, Olegas ČERNAŠEJUS The Influence Of Mechanical Vibrations Upon The Properties Of Ni Based Coatings
9:45 – 10:00	Ramutis BANSEVIČIUS, Valdas EIDUKYNAS, Rymantas Tadas TOLOČKA Introducing specific footwear-ground non-linear interaction models for orthopedic and sport related cases
10:00 – 10:15	Ramutis BANSEVIČIUS, Vytautas JŪRĖNAS, Valdas GRIGALIŪNAS Piezo-actuator for high resolution linear displacement system
10:15 – 10:30	Rolanas DAUKŠEVIČIUS, Genadijus KULVIETIS, Vytautas OSTAŠEVIČIUS Application of impact interaction in operation of piezotransducer for efficient energy harvesting from ambient vibrations
10:30 – 10:45	Coffee Break

Morning, October 15, 2010 (Friday)

Meeting Room 3

SESSION – 03 Session Chair: **L. Patašienė**

Time: 10:00 – 13:00

10:45 – 11:00	Aurelijus DOMEIKA, Valdas EIDUKYNAS, Kristina KAZLAUSKIENĖ, Pranas ŽILIUKAS Strength analysis of the plated clavicle
11:00 – 11:30	Egidijus DRAGAŠIUS, Vytautas JŪRĖNAS, Viktorija RUGAITYTĖ, Darius MAŽEIKA Magnetorheological fluid mixing using ultrasound Settled particles measurement in magnetorheological fluid
11:30 – 11:45	Artūras KILIKEVIČIUS, Mindaugas JUREVIČIUS, Michail BERBA Research of Dynamics of the Vibration Isolation Platform
11:45 – 12:00	Kęstutis KANAPECKAS, Remigijus JONUŠAS, Kazimieras JUŽĖNAS, Kazimieras RAGULSKIS, Application of generator of rotational vibrations for vibro-drilling operations
12:00 – 12:15	Vakentinas KARTAŠOVAS, Pranas MAŽEIKA, Vytautas BARZDAITIS Modeling of variable inertia rotor
12:15 – 12:30	Kazimieras RAGULSKIS Dynamics of two-mass system on a foundation witch anisotropic surface
12:30 – 12:45	Danielius GUŽAS The Dynamic Effect of the Moving Trains on the Railroad Rails and Propagation of Excited Vibrations
12:45 – 13:00	Closing remarks
13:00 – 14:00	Lunch